

Serial No.: 10/651,431

Amendment Dated: September 1, 2005

In response to Office Action Dated: June 1, 2005

REMARKS

Claims 1 – 6 and 8 – 19 have again been rejected under 35 USC § 103(a) as being unpatentable over *Confer* in view of *Brewster* or *Middelstadt, et al.* The rejection states that *Confer* teaches a method and apparatus for applying a reinforcing material to a carton blank, although the rejection does acknowledge that *Confer*, while purportedly teaching use of an adhesive such as a resin, does not recite using "an adhesive that is cold set and hot melt." The rejection further states that it is "conventional to use a cold/set-hot melt adhesive when applying reinforcing material to carton blanks," and specifically cites *Brewster* and *Middelstadt, et al.* as teaching the application of a reinforcing material such as a cutting edge to a carton blank using an adhesive of ethylene vinyl acetate to bond the material to the blank. The rejection concludes that it would have been obvious to a person of ordinary skill in the art to have provided *Confer* with the use of ethylene vinyl acetate as an adhesive, and that since Applicant indicates using ethylene vinyl acetate as a material for the cold set and/or the hot melt adhesive, "the ethylene vinyl acetate of *Confer* modified is considered to have the same degree of cold setting and hot melting properties as that claimed."

Applicant respectfully disagrees with the conclusions presented in the rejection and requests reconsideration and dismissal of the present rejection of the claims as pending over *Confer* in view of *Brewster* or *Middelstadt, et al.*

Applicant points out that in contrast to the attempted modification of *Confer*, the present invention is directed to a system and method of forming a reinforced carton blank in which a

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supply of reinforcing material is fed along a processing path toward engagement with a carton material, along which path a cold set adhesive applicator applies a cold set adhesive between the reinforcing materials. In an additional, separate step, a hot melt adhesive is applied between the reinforcing and carton materials, after which the carton and reinforcing materials are moved into registration with each other to form the reinforced cartons. None of the prior art references cited, either alone or in combination, teaches such a system or method for forming reinforced cartons in which two different applications of different types of adhesive, namely a cold set adhesive and a hot set adhesive, both are applied to the carton material to form the reinforced carton blanks.

The main reference of *Confer* generally is directed to a method of making a carton for 6 – 8 packs of cans, which addresses the problem of corner slit failures of such cartons. *Confer* simply shows the reinforcing strands of a yarn material threaded through an adhesive pot and, as acknowledged in the Official Action, does not mention the application of cold and hot melt adhesive materials. In fact, *Confer* only appears to generally mention the application of adhesive to the carton materials at column 2, lines 60 – 64, simply stating that "a water-proof adhesive such as a polyvinyl resin may be applied to the components ahead of the laminating station or together at the laminating station." While *Confer* does mention that adhesive can be applied to both the webs 12 and 16 and the strands 24, as noted, it does not disclose such applications as including the application of both hot melt and cold set adhesives. Likewise, *Brewster* and *Middelstadt, et al.* each fail to teach the application of both a cold set adhesive and the application of a hot melt adhesive in the same method and/or system for forming a reinforced

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carton. Both *Brewster* and *Middelstadt, et al.* appear to specifically recite the use of a "hot melt adhesive" or "hot melt pressure sensitive adhesive," which can include an ethylene vinyl acetate copolymer (EVA based), but do not disclose the use of a further or additional adhesive application, such as application of a cold set adhesive in addition to the hot melt adhesive. (See, *Middelstadt, et al.* ¶ 0005, *Brewster* ¶ 0027).

It is well settled that to establish a *prima facie* case of obviousness, looking at the invention as a whole, three basic criteria must be met:

1. there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available in the art to modify the reference or combine the teachings;
2. there must be a reasonable expectation of success; and
3. the prior art reference (or references) must teach or suggest all the claim limitations.

(MPEP § 2142) (emphasis added).

Further, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not simply based on the Applicant's disclosure. (*In Re Vaeck*, 947 F 2d 488, 20 USPQ 2d 1438 (Fed Cir. 1991)).

In the present rejection, there does not appear to be any suggestion, much less need, to try to modify the references of *Confer* by substituting the hot melt adhesive taught by *Brewster* or *Middelstadt, et al.*, nor does it appear that such a combination would be successful in forming the claimed invention. While the rejection concludes that it would be obvious to try to "replace one

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adhesive with another." Applicant respectfully points out that the present invention is directed to more than just simply substituting one adhesive for another. There further is no discussion of how or where in the references there is any express or implied suggestion to combine and modify these references to add an additional adhesive application step to apply both hot melt and cold set adhesives. *Confer* generally shows thin strands of yarn applied to a carton, and does not appear to require or suggest any need for using a hot melt adhesive, much less for applying both a hot melt and cold set adhesive for attaching such thin strands to the carton. Likewise, *Brewster* and *Middlestadt, et al.* appear to only disclose the application of a cutting edge or other type of tape, having a hot melt adhesive applied thereto, to a blank by use of heat and pressure, without indicating any need or suggestion to apply a cold set adhesive in addition to using a hot melt adhesive for more stable long term adhesion.

Further, even if *Confer* were modified so that the polyvinyl adhesive mentioned in *Confer* were replaced with the ethylene-vinyl acetate adhesive of either *Brewster* or *Middlestadt, et al.*, such a combination still would not be successful at forming the claimed invention. As discussed above, the claims, as currently pending, recite a system and method for forming reinforced cartons that includes both steps of applying a cold set adhesive using a cold set adhesive applicator to the reinforcing material, and, in addition, applying a hot melt adhesive with a hot melt adhesive applicator to the reinforcing material, after which the reinforcing material is applied to the carton material to form a carton blank. Such a system utilizing both the application of a cold set adhesive and the application of a hot melt adhesive simply is not taught by the cited combination of references.

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As additionally discussed in the Background section of the present application, it has been discovered that while cold set adhesives have significant benefits in terms of cost and the ability to provide high and low temperature bonding qualities that typically will not break down when exposed to extreme temperatures so as to maintain the adhesion between the carton materials. However, the relatively long cure times required for setting the cold set adhesive and consequent production rates for forming the laminated paperboard carton using such cold set adhesives, generally limits their production. As an alternative, hot melt adhesives, although more costly, typically allow a much faster lamination process for forming the cartons. Such hot melt adhesives typically can cure or set up in a matter of seconds to minutes, such that when the laminated sheet of paperboard material arrives at a downstream cutter, the sheets are already fully bonded together to enable their cutting without shifting or delaminating of the sheets. However, the higher cost of hot melt adhesives consequently increases the cost of manufacturing such carton materials, and it has been found that hot melt adhesives also typically do not have as significantly wide a range of resistance to extreme temperatures as do cold melt adhesives, such that they can become brittle and subject to cracking or breaking when temperatures drop to 0° F or can melt and delaminate at extremely high temperatures.

In determining obviousness under 35 USC § 103, the invention must be considered as a whole, in its totality, and, as has been recognized by the Court of Appeals for the Federal Circuit, the claimed invention must be viewed not only for its structure and properties, but also for the problem that it solves. (*In re Wright*, 848 F 2d 1216, 6 USPQ 2d 1959 (Fed Cir. 1988)). Thus, "the problem confronted by the inventor must be considered in determining whether it would

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have been obvious to have combined references in order to solve that problem." (*Diversitech Corp. v. Century Steps, Inc.*, 858 F 2d 675, USPQ 2d 1350 (Fed Cir. 1988). In the present case, none of the cited art appears to be concerned with the problems of delaminating of the reinforced carton material and increasing the efficiency of the production thereof, and consequently none of the cited references, either alone or in combination, teaches the structure and method of the claimed invention. Instead, the cited references are just generally directed to attaching yarn strands, cutting, or other types of tapes to carton materials, and thus seemingly would suffer from the very problem the claimed invention is directed to solving. For example, *Confer* is specifically directed to protecting against failures at corner slits in six or eight pack type cartons, and has a mere limited mention of the use of the adhesive for applying the reinforcing yarns to the carton materials. Likewise, the *Brewster* and *Middelstadt* references both appear to specifically disclose the use of hot melt adhesives for applying a cutting edge tape or box sealer to a carton or box for use in forming a serrated cutting edge for the carton for dispensing materials, such as rolls of film, paper or other products.

Accordingly, it is respectfully submitted that claims 1 – 6 and 8 – 19 are directed to a solution and invention not considered or rendered obvious by and are thus patentable over the cited combination of *Confer* in view of either *Brewster* or *Middelstadt, et al.* It accordingly is respectfully requested that the rejection of claims 1- 6 and 8 – 19 under 35 USC § 103(a) be withdrawn.

Claims 7 and 20 have been rejected under 35 USC § 103(a) as being unpatentable over *Confer* in view of *Brewster* or *Middelstadt, et al.* as applied to claims 1 – 6 and 8 – 19, and in

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further view of *Wandel*. Applicant respectfully submits that claims 7 and 20, which are dependent from claims 1 and 15, respectively, likewise are not made obvious by, and thus are patentable over the cited combination of references for the reasons discussed above with regard to claims 1 – 6 and 8 – 19. It accordingly is respectfully submitted that the rejection of claims 7 and 20 under 35 USC § 103(a) likewise should be withdrawn.

In conclusion, Applicant respectfully submits that claims 1- 20, as pending, define a system and method for producing reinforced cartons that provides a distinct advance in the art, which is not taught or suggested by the cited art of record, either alone or in combination. An early notice of allowance accordingly is solicited. Should the Examiner have any further questions regarding this response, she is invited and urged to telephone the undersigned attorney.

Respectfully submitted,



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